

REMARKS/ARGUMENTS

Claims 1 through 38 are now pending in this application. Claims 27 to 38 have previously been withdrawn from consideration. Claim 9 is presently canceled. Claims 1 and 16 are currently amended. Claims 25 to 26 have been allowed.

The Office Action has objected to claim 9 under 37 C.F.R. § 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicants have canceled claim 9, thereby obviating this objection.

The Office Action has also objected to claim 16, stating that the expression "10 A" in line 2 is incorrect. Applicants have amended claim 16 to properly recite "10 Angstroms".

The Office Action has rejected claims 1 to 24 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the Action sets forth that there is insufficient antecedent basis for "the petroleum hydrocarbon solvent" in line 4 of claim 1. Applicants have amended claim 1 to correct the minor informality.

The Office Action has rejected claims 1 to 24 under 35 U.S.C. § 103(a) as being unpatentable over Malloy et al. (U.S. Patent No. 4,243,831). The Examiner has also cited Biscardi et al. (U.S. Patent No. 6,579,441). Applicants submit that claims 1 to 24 are novel and nonobvious over both of these cited references. Furthermore, applicants respectfully submit that the references cited by the Examiner, taken alone or in any cited combination, neither disclose nor suggest the claims of the present invention.

Although the Examiner has rejected claims 1 to 24 under 35 U.S.C. § 103(a) as being unpatentable over Malloy et al., the Examiner wholly fails to state what Malloy et al. shows or what portion of Malloy et al. is being relied upon for the rejection. 37 C.F.R. § 1.104 (c)(2) sets forth that “[w]hen a reference is complex or shows or describes inventions other than that claimed by the applicant, the particular part relied on must be designated as nearly as practicable.” Moreover, § 1.104 (c)(2) requires that “[t]he pertinence of each reference, if not apparent, must be clearly explained and each rejected claim specified.” The Office Action is completely devoid of any discussion as to what portions of Malloy et al. are being relied on.

Nonetheless, applicants respectfully submit that neither the Malloy et al. patent nor the Biscardi et al. patent, taken alone or in combination, describes or suggests all of the elements of the present invention. Claim 1 describes a process for preparing Mineral Turpentine Oil (MTO) with boiling point in the range of 145° to 205°C and having saybolt color rating better than + 20 from crude oil feed, rich in nitrogen and / or active sulphur, said process comprising subjecting a petroleum hydrocarbon solvent to liquid phase adsorption in at least one column containing an adsorbent substance selected from molecular sieves, modified clays and mixtures thereof at ambient temperatures and pressure.

The Examiner concedes that Biscardi et al. does not disclose that the product (MTO) has a boiling point in the range of 145-205°C or 180-205°C. The Examiner also concedes that Biscardi et al. does not disclose that the feed is rich in nitrogen and/or sulfur. Furthermore, the Examiner concedes that Biscardi et al. does not disclose the amount of impurities in the product. Moreover, the Examiner concedes that Biscardi et al. does not disclose that the molecular sieve has a core diameter of 10 Angstroms. The Examiner further concedes that Biscardi et al. does not disclose the clay adsorbent has a surface area in the range of 350-425 m²/g. It is also conceded that Biscardi et al.

does not disclose that the adsorbent is regenerated at 200 to 300°C in nitrogen atmosphere. Applicants have not found any suggestion in the Biscardi et al. or Malloy et al. patents to support modification of the Biscardi et al. process to include the aforementioned elements. An obviousness rejection requires that a reference provide a teaching, suggestion or motivation for a proposed modification. The Biscardi et al. patent does not appear to provide any teaching, suggestion or motivation to be modified to include these elements. As previously set forth, claim 1 specifically covers a process for preparing Mineral Turpentine Oil (MTO) with boiling point in the range of 145° to 205°C and having saybolt color rating better than + 20 from crude oil feed, rich in nitrogen and / or active sulphur, the process comprising subjecting a petroleum hydrocarbon solvent to liquid phase adsorption in at least one column containing an adsorbent substance selected from molecular sieves, modified clays and mixtures thereof at ambient temperatures and pressure. Applicants respectfully traverse the rejection on the grounds that there is no teaching, suggestion or motivation in the Biscardi et al. or Malloy et al. patents for the modifications proposed by the Examiner. Furthermore, although not explicitly made in the Office Action, any attempted combination of the Biscardi et al. and Malloy et al. patents, even if technically feasible, does not yield the invention as recited in independent claim 1. As such, the Biscardi et al. patent and the Malloy et al. patent do not provide a sufficient basis for a section 103(a) rejection of claim 1.

Biscardi et al. teaches improving the pour and cloud points of a lubricating oil having viscosity greater than 6.5 cSt at 100°C and derived from Fischer-Tropsch process by adsorbing the naturally occurring haze precursors. Applicants submit that the process described by Biscardi et al. is related to a process for dehazing a base oil feed to produce a lubricating oil base stock, whereas the claimed present invention is related to a process for preparing Mineral Turpentine Oil.

Applicants submit that the feed used in the present invention and even the product obtained are entirely different from the feed being used and the product being obtained in Biscardi et al. In the claimed present invention, the disclosed feed being used is selected from Nigerian low sulphur crude, PG mix high sulphur crude or a mixture thereof. In contrast, the feed being used in Biscardi et al. is a lube base oil having haze. As previously discussed, the product being obtained in the claimed present invention is MTO and that being obtained in Biscardi et al. is a lubricating oil.

Applicants further submit that base oil develops a hazy appearance due to three reasons: (1) presence of water; (2) presence of foreign solid coloring bodies; and (3) presence of haze precursors. Biscardi et al. teaches a process of dehazing a base oil which contains mainly haze precursors. Haze in Biscardi et al. is not associated with water or foreign solid coloring bodies, and is associated with only wax-like hydrocarbons. The haze precursors have significantly paraffinic character, some with cyclic components having a long paraffin-like tail. These haze precursors have substantially different molecular structures than do the color bodies and heteromolecules.

Malloy et al. discloses a process for removal of peroxides and coloring bodies from internal olefins by solid adsorbents. Applicants submit that Malloy et al. basically relates to a process for the reduction of peroxides number and color of internal olefinic streams. In this case, the color is developed due to the formation of carbonyl compounds through oxidation of olefins that impart color bodies. Therefore, adsorbents are removing these carbonyl compounds. In contrast, applicants submit that the claimed present invention teaches removing nitrogen and sulfur compounds that are imparting color to the petroleum hydrocarbon stream. Applicants further submit that as the boiling point of the two streams are entirely different, the impurities present in the two solvents will be entirely different. The claimed present invention removes two particular heteroatoms present in the MTO stream. These are mercaptans and nitrogenous compounds. Neither Biscardi et al. nor Malloy et

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al. teaches a process for removing mercaptans and nitrogenous compounds from a MTO stream.

Applicants submit that the specific heteroatoms present in the feed of the present invention are different from the heteroatoms that are present in the feed of Biscardi et al. and Malloy et al. More specifically, applicants submit that the specific heteroatoms present in the base oil of Biscardi et al. is of higher molecular weight, and these compounds will have different molecular structural and chemical characteristics as compared to the heteroatoms that are present in MTO stream. Due to the difference in the chemical nature of the heteroatoms present in the lubricating oil and MTO, the nature of interaction of these heteroatoms with clay will be different. Consequently, keeping in view all of the aforementioned factors and differences, applicants respectfully submit that Biscardi et al. and Molley et al. do not teach a process for improving color stability of MTO. As such, and also for the reasons set forth above, claim 1 is patentably distinguishable over the Biscardi et al. patent and the Malloy et al. patent, either alone or in combination. Claims 2 to 24 depend from claim 1, so they are also patentably distinguishable for at least the same reason as claim 1.

Based on the foregoing, applicants respectfully submit that the claims of the present invention are allowable, request that all rejections and objections be reconsidered and withdrawn, and that the claims of this application be given favorable consideration and immediate passage to allowance. More specifically, applicants submit that claims 1 to 24 are clearly in condition for immediate allowance. Claims 25 and 26 have already been allowed. In the event that further clarification is required prior to allowance, applicants respectfully request that the Examiner contact applicants' undersigned attorney.

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Respectfully submitted,



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